E350DM-E33
E350M-E33
E240M-E33
series

MS-7720 (v1.x) Mainboard

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G52-77201X2

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REVISION HISTORY

Revision	Revision History	Date
V1.0	First release	2010/12
V1.1	Add E350DM-E33	2011/08

SAFETY INSTRUCTIONS

- Always read the safety instructions carefully.
- Keep this User Manual for future reference.
- Keep this equipment away from humidity.
- Lay this equipment on a reliable flat surface before setting it up.
- The openings on the enclosure are for air convection hence protects the equipment from overheating. Do not cover the openings.
- Make sure the voltage of the power source is at 110/220V before connecting.
- Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
- Always Unplug the Power Cord before inserting any add-on card or module.
- All cautions and warnings on the equipment should be noted.
- Never pour any liquid into the opening that can cause damage or cause electrical shock.
- If any of the following situations arises, get the equipment checked by service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment does not work well or you can not get it work according to User Manual.
  - The equipment has been dropped and damaged.
  - The equipment has obvious sign of breakage.
- DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60°C (140°F), IT MAY DAMAGE THE EQUIPMENT.

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TECHNICAL SUPPORT

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

- Visit the MSI website for technical guide, BIOS updates, driver updates, and other information: http://www.msi.com/service/download
- Contact our technical staff at: http://support.msi.com

FCC-B RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the measures listed below.

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/ television technician for help.

Notice 1
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2
Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.

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Micro-Star International
MS-7720

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

BATTERY INFORMATION

European Union:

Batteries, battery packs, and accumulators should not be disposed of as unsorted household waste. Please use the public collection system to return, recycle, or treat them in compliance with the local regulations.

Taiwan:

廢電池請回收

For better environmental protection, waste batteries should be collected separately for recycling or special disposal.

California, USA:

The button cell battery may contain perchlorate material and requires special handling when recycled or disposed of in California. For further information please visit: http://www.dtsc.ca.gov/hazardouswaste/perchlorate/

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.

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CHEMICAL SUBSTANCES INFORMATION

In compliance with chemical substances regulations, such as the EU REACH Regulation (Regulation EC No. 1907/2006 of the European Parliament and the Council), MSI provides the information of chemical substances in products at:

http://www.msi.com/html/popup/csr/evmtprtt_pcm.html

BSMI_EMI 聲明

警告使用者

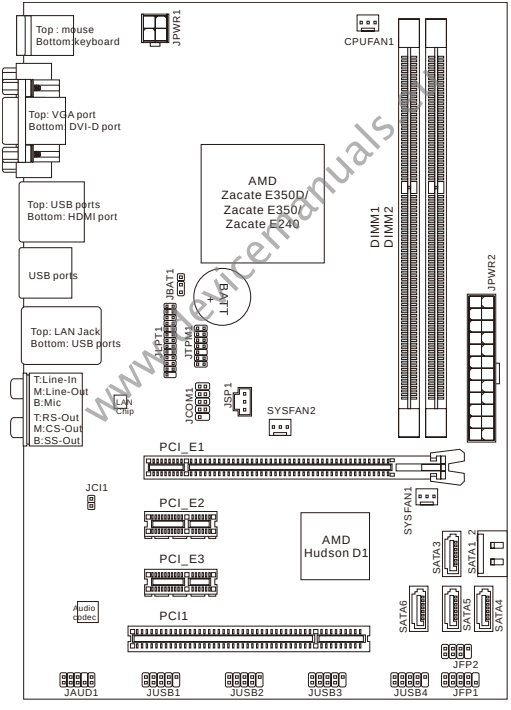
這是甲類的資訊產品，在居住的環境中使用時，可能會造成無線電干擾，在這種情況下，使用者會被要求採取某些適當的對策。

ENGLISH

GETTING START

Thank you for choosing the E350DM-E33/ E350M-E33/ E240M-E33 series (MS-7720 v1.x) Micro-ATX mainboard. The E350DM-E33/ E350M-E33/ E240M-E33 series are designed based on **AMD® Hudson D1** chipset and **Zacate-FT1** APU for optimal system efficiency. The E350DM-E33/ E350M-E33/ E240M-E33 series deliver a high performance and professional desktop platform solution.

Layout



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SPECIFICATIONS

Processor
- Integrated AMD® Zacate-FT1™ APU
  - Zacate E350D, dual core, for E350DM-E33
  - Zacate E350, dual core, for E350M-E33
  - Zacate E240, single core, for E240M-E33

Chipset
- AMD® Hudson D1 chipset

Memory Support
- 2 DDR3 DIMMs support DDR3 1333/ 1066 SDRAM (total Max. 8GB)
  (For more information on compatible components, please visit http://www.msi.com/service/test-report/)

LAN
- Supports LAN 10/ 100/ 1000 by Realtek® RTL8111E

Audio
- Chip integrated by Realtek® ALC887/ ALC892 (optional)
- Supports 7.1 channels audio out
- Compliant with Azalia 1.0 Spec

SATA
- 6 SATA 3Gb/s ports by AMD® Hudson D1

Connectors
- Back panel
  - 1 PS/2 mouse port
  - 1 PS/2 keyboard port
  - 1 VGA port
  - 1 DVI-D port
  - 1 HDMI port
  - 6 USB 2.0 ports
  - 1 LAN jack
  - 6 flexible audio jacks
- On-Board Connectors
  - 4 USB 2.0 connectors
  - 1 Front Panel Audio connector
  - 1 Serial Port connector
  - 1 TPM connector
  - 1 Parallel Port connector
  - 1 S/PDIF-Out connector
  - 1 Chassis Intrusion connector

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Slots
- 1 PCIE x16 slot
- 2 PCIE x1 slots
- 1 PCI slot

Form Factor
- Micro-ATX (17.0 cm X 24.4 cm)

Mounting
- 6 mounting holes

If you need to purchase accessories and request the part numbers, you could search the product web page and find details on our web address below
http://www.msi.com/index.php

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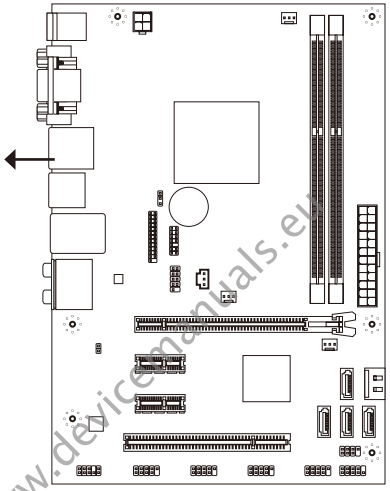
SCREW HOLES

When you install the mainboard, you have to place the mainboard into the chassis in the correct direction. The locations of screws holes on the mainboard are shown as below.

The side has to toward the rear, the position for the I/O shield of the chassis.



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Refer above picture to install standoffs in the appropriate locations on chassis and then screw through the mainboard screw holes into the standoffs.

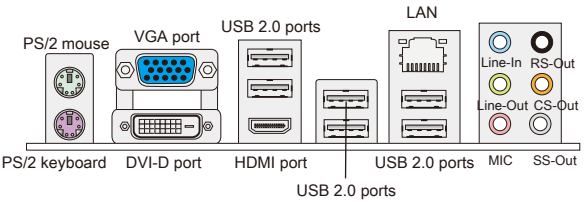
IMPORTANT

* *To prevent damage to the mainboard, any contact between the mainboard circuit and chassis or unnecessary standoffs mounted on the chassis is prohibited.*

* *Please make sure there is no metal components placed on the mainboard or within the chassis that may cause short circuit of the mainboard.*

REAR PANEL

The rear panel provides the following connectors:



HARDWARE SETUP

Installing Memory Modules

1. The memory module has only one notch on the center and will only fit in the right orientation.
2. Insert the memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the DIMM slot. **You can barely see the golden finger if the memory module is properly inserted in the DIMM slot.**
3. The plastic clip at each side of the DIMM slot will automatically close.

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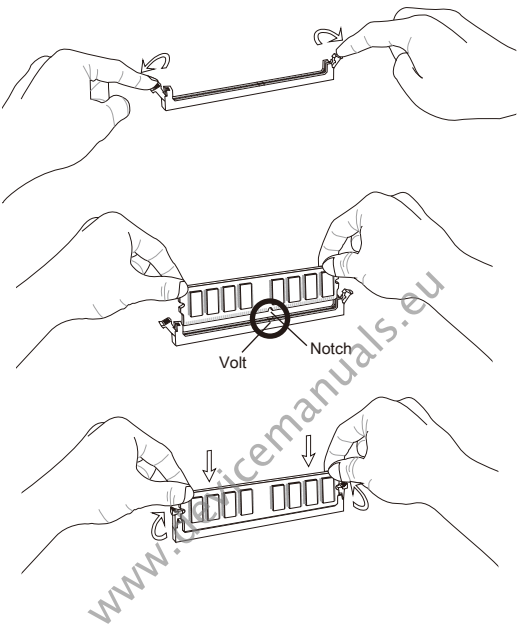

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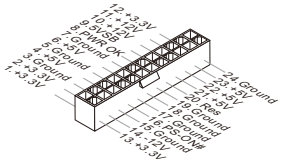
IMPORTANT

* *DDR3 memory modules are not interchangeable with DDR2 and the DDR3 standard is not backwards compatible. You should always install DDR3 memory modules in the DDR3 DIMM slots.*

* *To enable successful system boot-up, always insert the memory modules into the DIMM1 first.*

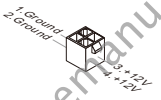
ATX 24-Pin Power Connector: JPWR2

This connector allows you to connect an ATX 24-pin power supply. To connect the ATX 24-pin power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.



ATX 4-Pin Power Connector: JPWR1

This 12V power connector is used to provide power to the CPU.



IMPORTANT

Make sure that all the connectors are connected to proper ATX power supplies to ensure stable operation of the mainboard.

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Serial ATA Connector: SATA1~6

This connector is a high-speed Serial ATA interface port. Each connector can connect to one Serial ATA device.

IMPORTANT

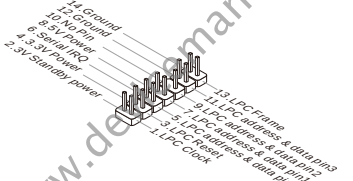
Please do not fold the Serial ATA cable into a 90-degree angle. Otherwise, data loss may occur during transmission.

Fan Power Connectors: CPUFAN1, SYSFAN1, SYSFAN2

The fan power connectors support system cooling fan with +12V. When connecting the wire to the connectors, always note that the red wire is the positive and should be connected to the +12V; the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset onboard, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.

TPM Module Connector: JTPM1

This connector connects to a TPM (Trusted Platform Module) module. Please refer to the TPM security platform manual for more details and usages.



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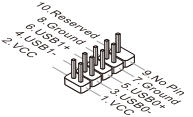
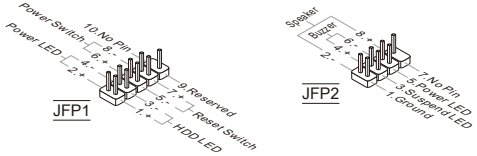
Front USB Connector: JUSB1/ JUSB2/ JUSB3/ JUSB4

This connector, compliant with Intel® I/O Connectivity Design Guide, is ideal for connecting high-speed USB interface peripherals such as USB HDD, digital cameras, MP3 players, printers, modems and the like.



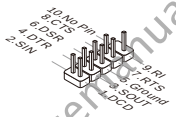
Front Panel Connectors: JFP1, JFP2

These connectors are for electrical connection to the front panel switches and LEDs. The JFP1 is compliant with Intel® Front Panel I/O Connectivity Design Guide.



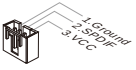
Serial Port Connector: JCOM1

This connector is a 16550A high speed communication port that sends/receives 16 bytes FIFOs. You can attach a serial device.



S/PDIF-Out Connector: JSP1

This connector is used to connect S/PDIF (Sony & Philips Digital Interconnect Format) interface for digital audio transmission.



Chassis Intrusion Connector: JCI1

This connector connects to the chassis intrusion switch cable. If the chassis is opened, the chassis intrusion mechanism will be activated. The system will record this status and show a warning message on the screen. To clear the warning, you must enter the BIOS utility and clear the record.

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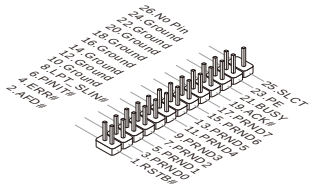
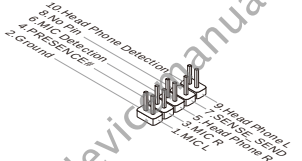
Parallel Port Header: JLPT1

This connector is used to connect an optional parallel port bracket. The parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.



Front Panel Audio Connector: JAUD1

This connector allows you to connect the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.



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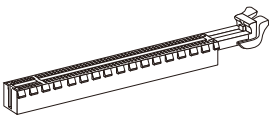
Clear CMOS Jumper: JBAT1

There is a CMOS RAM onboard that has a power supply from an external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, set the jumper to clear data.

IMPORTANT

You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

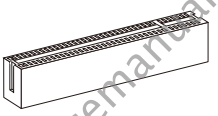
PCI Express Slot
The PCI Express slot supports the PCI Express interface expansion card.



PCIE x16 slot.

PCIE x1 slot.

PCI Slot
The PCI slot supports LAN card, SCSI card, USB card, and other add-on cards that comply with PCI specifications.



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IMPORTANT
When adding or removing expansion cards, make sure that you unplug the power supply first. Read the documentation for the expansion card to configure any necessary hardware or software settings for, such as jumpers, switches or BIOS configuration.

PCI Interrupt Request Routing
The IRQ, acronym of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus pins as follows:

Order / Slot	1	2	3	4
PCI 1	INT A#	INT B#	INT C	INT D#

BIOS SETUP

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <DEL> key to enter Setup.

Press DEL to enter Setup Menu

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

The Menu Bar

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Main
Use this menu for basic system configurations, such as time, date etc.

Advance
Use this menu to set up the items of special enhanced features.

OC
Use this menu to specify the settings for DRAM timing and CPU features.

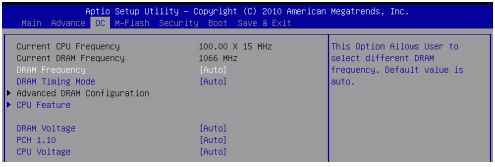
M-Flash
Use this menu to read/ flash the BIOS form storage drive (FAT/ FAT32 format only).

Security
Use this menu to set supervisor and user passwords.

Boot
Use this menu to specify the priority of boot devices.

Save & Exit
This menu allows you to load the BIOS default values or factory default settings into the BIOS and exit the BIOS setup utility with or without changes.

OC


Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Advance OC M-Flash Security Boot Save & Exit
Current CPU Frequency 100.00 X 15 MHz
Current DRAM Frequency 1066 MHz
DRAM Frequency [Auto]
DRAM Timing Mode [Auto]
Advanced DRAM Configuration
CPU Feature
DRAM Voltage [Auto]
PCH 1.10 [Auto]
CPU Voltage [Auto]
This Option Allows User to select different DRAM frequency. Default value is auto.

Current CPU / DRAM Frequency
These items show the current clocks of CPU and Memory speed. Read-only.

DRAM Frequency
This setting controls the ratio of memory frequency to enable the memory to run at different frequency combinations.

DRAM Timing Mode
Select whether DRAM timing is controlled by the SPD (Serial Presence Detect) EEPROM on the DRAM module. Setting to [Auto] enables DRAM timings and the following “Advanced DRAM Configuration” sub-menu to be determined by BIOS based on the configurations on the SPD. Selecting [Manual] allows users to configure the DRAM timings and the following related “Advanced DRAM Configuration” sub-menu manually.

Advanced DRAM Configuration
Press <Enter> to enter the sub-menu. In this sub-menu you can adjust the advanced DRAM timing.

Command Rate
This setting controls the DRAM command rate.

tCL
This controls the CAS latency, which determines the timing delay (in clock cycles) before SDRAM starts a read command after receiving it.

tRCD
When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe). The less the clock cycles, the faster the DRAM performance.

tRP
This setting controls the number of cycles for Row Address Strobe (RAS) to be allowed to precharge. If insufficient time is allowed for the RAS to accumulate its charge before DRAM refresh, refreshing may be incomplete and DRAM may fail to retain data. This item applies only when synchronous DRAM is installed in the system.

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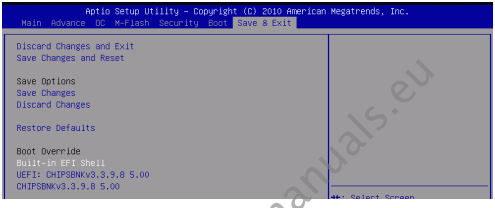
tRAS
This setting determines the time RAS takes to read from and write to memory cell.

tRC
The rowcycle time determines the minimum number of clock cycles a memory row takes to complete a full cycle, from row activation up to the precharging of the active row.

CPU Feature
Press <Enter> to enter the sub-menu. In this sub-menu you can adjust the CPU features.

Save & Exit



Discard Changes and Exit
Use this item to abandon all changes and exit setup.

Save Changes and Reset
Use this item to save changes and reset the system.

Save Changes
Use this item to save changes.

Discard Changes
Use this item to abandon all changes.

Restore Defaults
Use this item to load the optimized default values set by the BIOS vendor.

== Boot Override ==
The installed storage devices will appear on this menu, you can select one of them be a boot device.

Built-in EFI Shell
Use this item to enter the EFI Shell.

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